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Mr. James Broderick
NASA/ Goddard Space Flight Center
Code 902
Greenbelt, Maryland 20771

Dear Mr. Broderick,

This letter summarizes the status of work conducted on NASA contract NAS5-20914 (Application of Landsat Data to Delimitation of Avalanche Hazards in Montane Colorado). As I mentioned on the telephone, our work schedule has slipped somewhat, due mainly to the necessity that I assume some additional responsibilities during the sabbatical leave of Dr. J.D. Ives, Director of the Institute of Arctic and Alpine Research. However, we are near the point at which we can prepare a final comprehensive report on the project work.

Work completed:

1. Avalanche hazard maps of the Durango, Leadville, and Montrose 1:250,000 quadrangles.

2. Data have been collected for the following tests of the accuracy and reliability of the avalanche hazard maps:

   a) Variability of Landsat interpretations by different investigators.

   b) Correlation of Landsat interpretations and "known" avalanche hazard areas.

   c) Comparison of human- and computer-generated slope maps.

   d) Comparison of errors introduced vs errors eliminated by various low-elevation cut-off points for potential avalanche hazards.

3. Preliminary evaluation of the usefulness of Landsat imagery for delineating major landslide areas is finished.

Work remaining:

1. The avalanche hazard maps need to be drafted into final form. However, I would like to be able to revise the Montrose and Durango quadrangles to include the "known" avalanche hazards on eight recently completed

7-½ minute quadrangles mapped by INSTAAR under NASA Grant NGL-06-0030200.

2. The data collected for the accuracy and reliability tests need to be analyzed and interpreted.

3. The final report must be prepared.

In order to accomplish these tasks and assure a good quality final report, I estimate that I will need a 3-month no-cost contract extension to 28 April 1977. However, if demands on my time slacken, a draft of the final report will be submitted prior to that date.

I hope this delay will not cause you serious problems.

Sincerely,

Daniel H. Knepper, Jr.

Daniel H. Knepper, Jr.
Research Associate/INSTAAR

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